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ABSTRACTS OF RESEARCH STUDIES IN AGRICULTURAL EDUCATION COMPLETED IN 1965-66 IN THE PACIFIC REGION.

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THIRTY STAFF STUDIES AND MASTERS' THESES IN AGRICULTURAL EDUCATION ARE REPORTED IN THE FOLLOWING AREAS -- AGRICULTURAL MACHINERY, CURRICULUM, EDUCATIONAL NEEDS, FARM LABORERS, GRADUATE FOLLOWUP, INTERNATIONAL EDUCATION, OCCUPATIONAL ASPIRATIONS, PROGRAM EVALUATION, AND STUDENT ACTIVITIES. THE PURPOSE, METHOD, AND FINDINGS OF EACH STUDY ARE SUMMARIZED. THE STUDIES ARE ARRANGED ALPHABETICALLY BY AUTHOR. (JM)

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COMPLETED IN 1965-66

IN THE PACIFIC REGION

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ANNAN, JOHN L. Occupational Aspirations of Colorado High School Students. Master's Report, M.E., 1966, Colorado State University. 123 p. Library, Colorado State University, Fort Collins.

Purpose. -- To determine the occupational aspirations of Colorado high school students enrolled in vocational agriculture as compared with those enrolled in subjects other than vocational agriculture.

Method. -- The population studied consisted of 192 vocational agriculture students and 187 students enrolled in subjects other than vocational agriculture and were selected by means of random numbers. Schools offering vocational agriculture during the 1965-66 school year were used in the study. The data were collected by means of a survey questionnaire and were tabulated by means of IBM processes.

Findings. -- Sixty-six and seven tenths of the vocational agriculture students had ultimate aspirations in farming and non-production agricultural occupations whereas, 74.9 percent of the non-vocational agriculture students indicated occupational aspirations in non-agricultural areas. Both groups aspired strongly toward professional, technical, and skilled occupations. Regardless of the type of occupational aspiration, 96.5 percent of the vocational agriculture students and 87 percent of the non-vocational agriculture students indicated a willingness to enroll in training for the occupations of their choice as a part of their high school educational program. Parents were the most influential persons in assisting students with occupational aspirations. Vocational agriculture students who aspired to non-production agricultural occupations resided mainly on farms with only 24.4 percent living in a town or city. Where the parents had higher educational achievements, the students in turn had higher occupational aspirations. A need for additional guidance and counseling regarding non-production agricultural occupations was expressed by 94.8 percent of the vocational agriculture students and 77 percent of the non-vocational agriculture students.

BECKET, JAMES W. The Domestic Farm Laborer, A Study of Yolo County Tomato Pickers. Staff Study, Research Monograph #2, 1966. 29 p. Department of Agricultural Education, University of California, Davis, and Bureau of Agricultural Education, California State Department of Education, Sacramento.

Purpose. -- The study had two main purposes. The first was to provide information about the domestic farm laborer to be used as supplemental material in courses in labor management for supervisors of farm labor. The second was to provide information to the public concerning the people performing the jobs formerly done by the Mexican bracero.

Method. -- A twenty-per cent sample of tomato pickers working in representative fields in Yolo County, California, were interviewed while on the job. The data from 751 interviews were tabulated and cross-tabulated with analysis based on frequency distribution and percentages.

Findings. -- In addition to a considerable amount of demographic data on farm laborers not previously available, the date bore out the fact that a wide variety of types of people are performing these hand labor jobs. This finding has significance not only for the foreman in charge of the job in the field, but also for those interested in various kinds of programs, including legislative action, designed to alleviate some of the problems associated with farm labor.

BOYDEN, ROBERT JOHN. A Study Of The Vocational Education Needs Of The Olympia, Washington Area. Thesis, M.S., 1966, Washington State University. 58 p. Holland Library, Washington State University, Pullman.

Purpose. -- The purpose of the study was to secure information on the following criteria: number of high school students, amount of taxable wealth, identify service area, present and potential employment opportunities, extent of industrial support, voter approval, student interest in vocational education, other training agencies in the area, types of administrative set-up, and physical facilities necessary to develop a good vocational program.

Method. -- The material was collected by the writer from various sources within the community--such as the Chamber of Commerce surveys, employment reports, labor forecasts, and other studies.

Findings. -- Findings of the study were: anticipated population growth of 20 per cent in the next ten years, greatest growth in government and service jobs, double enrollment in three years for Olympia Vocational-Technical Institute is anticipated, and increased growth in adult vocational classes. Suggested additional courses include: technician courses, mechanical skills, sales and services, and office occupations.

BURENHEIDE, OMER J. Use of Non-School Time by Agriculture Students. Master's Report, M.Ed., 1966, Colorado State University. 97 p. Vocational Education Department, Colorado State University, Fort Collins.

Purpose. -- This study was made to determine the use of the vocational agriculture students' time outside of school hours.

Method. -- Data for this study were collected from 110 vocational agriculture students by means of a time record sheet completed for 44 days during the period of Semptember 8, 1965 to February 24, 1966.

Findings. -- The data disclosed that the students spent 35.41 per cent of the total time devoted to 11 activity areas on recreation. Work activities were next in the amount of time spent with 28.52 per cent; meals, 14.83 per cent; school subjects, 8.23 per cent; athletics, 5.45 per cent; supervised practice programs, 4.32 per cent; religion, 2.23 per cent; music, 0.50 per cent; Future Farmers of America, 0.37 per cent; farm and ranch organizations, 0.12 per cent; and 4-H, 0.10 per cent.

Parent-son partnerships, profit-sharing arrangements, or lease agreements should be considered to aid students in making better use of their time.

More time should be spent on informing and impressing upon parents and students the benefits of quality supervised practice programs.

More F. F. A. community service activities and evening F.F.A. meetings should be used to afford students greater benefits from these activities.

Recreational activities might well be examined carefully to see if the time spent on these activities could become more productive.

CARLSON, ARLAND C. Information Concerning Improving Wyoming Programs of Vocational Agriculture Through the Reactions of Former Students. Thesis, M. S., 1966, University of Wyoming. 69 p. Coe Library, University of Wyoming, Laramie.

Purpose. -- The purpose of the study was (1) to collect information from graduates who had completed four years of vocational agriculture, and (2) to use this information to determine the possible changes which could improve the curriculum and instructional methods used in teaching vocational agriculture in Wyoming.

Method. -- One hundred former students were asked to respond to a nine-point questionnaire concerning the present vocational agriculture programs in Wyoming. A review of literature was made to supplement these reactions.

Findings. -- It was found that an alloted time of four years with two hours of instruction each day should continue with the present four areas: classroom, farm mechanics, supervised farming, and Future Farmers of America, as an important part of the total program.

A need is present to update reference materials and to re-evaluate the present coverage of the local vocational agriculture department to best meet the needs of the local communities.

GORDON, SAMUEL HARVEY. Developing A Course Of Study Of Vocational Agriculture At The Church College of New Zealand. Professional paper M.S., 1966, Utah State University, Main Library, Logan.

Purpose. -- The purpose of the study was to review the possible school systems of New Zealand and to develop a course of study in vocational agriculture for the Church College of New Zealand.

Method. -- The author taught at the Church College for a four year period. He had the opportunity of starting a program in agriculture and was confronted with the need to collect all the data possible from those who were in the school systems and from others interested in agricultural programs. After collecting the data, he organized a course study.

Findings. -- That the young men of New Zealand and their parents were anxious to study in a program that was organized on a basis that would meet their needs.

HERGENRETER, LEONARD A. Need For Farm Tractor And Machinery Mechanics For The Farm Implement Industry In Colorado. Master's Report, M.S., 1966, Colorado State University. 156 p. Library, Colorado State University, Fort Collins.

Purpose. -- The primary purpose was to determine the number of tractor and machinery mechanics presently employed and the predicted employment needs for 1967 for the implement industry in Colorado. Eight questions were listed as secondary purposes for study.

Method. -- Questionnaires were mailed to 275 implement dealers in Colorado and the immediate adjacent areas of other states bordering Colorado. Data were used from 150 usable returned questionnaires.

Findings. -- The employers estimated a substantial increased need for additional skilled and semi-skilled tractor and machinery mechanics by 1967. They estimated an increased need of 57.2 percent for skilled tractor mechanics and 73.2 percent for skilled machinery mechanics. Data indicated that the skilled tractor and machinery mechanics would be needed to a considerably greater degree than semi-skilled mechanics.

Approximately two-thirds of the firms surveyed had been in business for more than 15 years.

Over-half the firms indicated a need for mechanics skilled in servicing and repairing small air cooled gas engines.

Part-time and unskilled workers were found to play an important role in the farm equipment businesses.

It was found that 57 percent of the skilled and 22 percent of the semi-skilled tractor mechanics had eight or more years of farm experience after the age of 14 years. Approximately 46 percent of the skilled and 25 percent of the semi-skilled machinery mechanics had eight or more years of farm experience after the age of 14 years.

Sixty-one and three-tenths percent of the 150 employers surveyed preferred employees with a farm experience background.

Forty percent of the employers preferred their tractor mechanics to have a trade or technical school background.

The average annual salary for beginning tractor mechanics was found to be $3,736. Experienced tractor mechanics salaries averaged $4,970 annually. Beginning machinery mechanics salaries averaged $3,600 annually while experienced machinery mechanics salaries averaged $4,513.

Over 80 percent of the employers provided paid vacations. More than half provided paid sick leave and bonuses.

The major reasons listed by the employers for discharging their tractor and machinery mechanics in order of importance were, "incompetence", "low-output", "undependable", and "poor personal habits".

Employers generally favored cooperating in cooperative work experience training programs with the schools. Sixty-four percent of the 150 employers favored post high school cooperative work experience programs and 46 percent indicated they would cooperate with a high school program.

HOCH, DONALD HARRY. A Study of Mechanical Skills Performed Relative to Tractor Maintenance Repair and Overhaul by Farmers in Payette County. Thesis, M.S., 1965, University of Idaho. 54 p. Library, University of Idaho, Moscow.

Purpose. -- To determine to what extent Payette County farmers actually repair and overhaul their own tractors and to determine if this repair and overhaul was profitable as compared to commercial prices. To analyze the data and recommend a suggested study guide for teaching technical farm tractor training activities for both adult and all-day programs.

Method. -- Statistical data was obtained by predetermined records kept for one year by forty Payette County farmers who were operating 115 tractors. These records included the actual repair jobs completed and the labor and parts cost to the farmer of repairs made at home as compared to commercial repair shop costs. Other information was also collected through interview such as some of the reasons why the farmers had commercial work done on their tractors.

Findings. -- Much interesting information was determined from this study, however, some of the major conclusions were as follows: (1) It is definitely to the advantage of Payette County farmers to do their own tractor maintenance and minor repair jobs. (2) It is not profitable for Payette County farmers to do major tractor engine overhaul themselves. (3) The lack of time was the primary reason Payette County farmers did not do more of their own tractor repair work. (4) One of the major reasons why Payette County farmers were very interested in learning about tractor mechanics was to gain information which would enable them to evaluate the quality of commercial repair work. (5) Some Payette County farmers believed they could better spend their time managing their farm business rather than doing their own major overhaul work.

HOWARD, EVERETT DEWAYNE. A Study of the Contributions of Chapter, District, and State FFA Contests to the Idaho Vocational Agriculture Course of Study. Thesis, M.S., 1966, University of Idaho. 42 p. Library, University of Idaho, Moscow.

Purpose. -- To determine the overall importance of the chapter, district, and state FFA contests. To analyze the data and recommend changes which would improve the contests.

Method. -- Statistical data was obtained by mail questionnaire from sixty-five vocational agriculture instructors in Idaho. Thorough survey information was collected regarding education value, participation, interest, justification, preparation, and revision of the FFA contests.

Findings. -- It was concluded from this study that the FFA contests are an important part of the overall course of study in the vocational agriculture program. However, the results indicated a definite need for some revision in all contests, if they are to continue to be beneficial. The contests should be continually re-evaluated and revised to insure future benefits to the student. The majority of the respondents felt the poultry contest should be replaced with a soils contest. It was generally felt that the time, location and financing of state judging contests had little or no bearing on attendance by the various schools, and therefore, they should be continued in the same manner. From the tabulated results the writer made several recommendations, which he believed would be beneficial to the success of the contests.

KARAMI, MANOUCHEHR. Availability of Audio-Visual Equipment in Agricultural Departments in California Secondary Schools. Non-thesis survey, 1966, California State Polytechnic College. Department of Agricultural Education, California State Polytechnic College, San Luis Obispo.

Purpose. -- To determine the availability of selected audio-visual equipment in California Secondary Schools; such information to serve as a partial guide in determining future production of instructional materials for use in agricultural departments.

Method. -- Secondary school agriculture departments were surveyed by random sample; schools were numbered alphabetically by geographic region of the state, and using a table of random numbers eight schools were selected from each of five regions, with nine selected from the San Joaquin Region and fifteen selected from the Los Angeles City Schools District. Results were tabulated as to relative availability--immediate use, necessary to pre-schedule for use in the school, or may be obtained from county schools office but not immediately available.

Findings. -- Twenty-four different kinds of audio-visual equipment and/or facilities were identified and the availability surveyed. Replies were received from 63 of the 65 schools surveyed. Sixty percent or more of the schools had the following equipment and/or facilities either immediately available, or available on a pre-schedule basis in the school:

Film strip projector - - - - - - - - - - - - - 99 per cent

Sound/film strip projector - - - - - - - - - 63 per cent

Slide projector- - - - - - - - - - - - - - - - 99 per cent

16 mm sound movie projector- - - - - - - - 83 per cent

Overhead projector - - - - - - - - - - - - - 89 per cent

Opaque projector - - - - - - - - - - - - - - 84 per cent

Tape recorder- - - - - - - - - - - - - - - - 80 per cent

Record player- - - - - - - - - - - - - - - - 85 per cent

Photocopier (such as Thermofax, Zerox, etc.) - - - - - - - - 78 per cent

LAWRENCE, JOHN A. A Study to Determine Opportunities and Needed Training in Off-Farm Agricultural Occupations in Twin Falls, Idaho. Thesis, M.S., 1966, University of Idaho. 97 p. Library, University of Idaho, Moscow.

Purpose. -- To provide information for developing an off-farm agricultural occupation curriculum to be included as a part of the Twin Falls vocational agriculture program and to identify occupations, other than farming, in Twin Falls, Idaho.

Method. -- Thirty-four (34) businesses or services were selected by a local committee from a list of 104 local businesses. A personal interview survey was conducted with the selected businesses or services.

Findings. -- (1) Data revealed that 27.1 per cent of the employees in these businesses need a background of agriculture training with semi-skilled and skilled laborers required for 71.6 per cent of the job opportunities provided by these industries. (2) Opportunities for prospective employees possessing only a high school education appeared limited to the unskilled, semi-skilled and to part of the skilled and sales personnel. (3) Considerable importance was placed on a background training of actual farm experience. On-the-job training and high school vocational agriculture were considered as good sources of agricultural training. (4) Over 75 per cent of the companies surveyed indicated a willingness to cooperate in an on-the-job training program for high school students. (5) It appears that the present vocational agriculture program offers an excellent background of agricultural training but could be improved by a teaching unit for off-farm agricultural occupations.

LONG, ROBERT RHEA. A Study of Guidance Services Regarding Vocational Agriculture Students in the State of Idaho. Thesis, M.S., 1966, University of Idaho. 69 p. Library, University of Idaho, Moscow.

Purpose. -- To reveal the nature of guidance services for vocational agriculture students in the state of Idaho.

Method. -- Statistical data were obtained by mail questionnaire from sixty-two vocational agriculture teachers in Idaho. Information was gathered regarding guidance materials, standardized guidance tests, teaching time devoted to guidance, training and interest in additional training of Idaho vocational agriculture teachers, provisions made by vocational agriculture teachers for guidance to their students, and the attitudes of the vocational agriculture teachers toward the programs of guidance in their respective schools.

Findings. -- It was concluded from this study that guidance is an important part of the vocational agriculture program. However, the findings indicate that vocational agriculture teachers and guidance personnel are not working closely enough together for the optimum benefit of the students. Vocational agriculture teachers and guidance personnel should strive to become better informed of each other's program. A majority of the respondents desired more training in guidance. It was generally felt that training in occupational information and counseling techniques either from regular enrollment in college guidance courses or from guidance work at the Idaho vocational agriculture teachers' annual conference would be most beneficial. From the results of this study the writer made four recommendations which he believed would be beneficial to the guidance services for Idaho vocational agriculture students.

LOREEN, C. O., MAGISOS, J. H., and LONG, G. A. A Study to Determine Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Washington. Staff Study, 1966, Agricultural Education, Washington State University, Pullman, and The State Board for Vocational Education, Olympia.

Purpose. -- The study was designed to secure information about the employment opportunities and the needed competencies in off-farm agricultural occupations in Washington in order to assist in the planning of new programs in agricultural education and to supply information for guidance purposes.

Method. -- Information was secured through personal interviews with owners and managers of companies, businesses and agencies by means of survey forms. Teachers of agriculture throughout the state prepared lists of the businesses in their areas that in their judgement employed people in agricultural occupations. The yellow pages in telephone directories were used in compiling these lists. Sixty teachers of vocational agriculture volunteered for a training session and to serve as interviewers in gathering the information.

Findings. -- There were 2214 establishments in Washington that employed persons who need competencies in agriculture. These firms were employing a total of 34,850 persons of which 13,000 or 37 per cent need agricultural competencies.

From 1965 to 1970 there will be a 9.7 per cent increase in the number employed, 13,000 to 14,230 in off-farm agricultural occupations in Washington. Each year there will be an increase of 240 employees to meet the increase in the number employed and 3 per cent of 13,000 as annual replacements making a total of 630 per year.

The 841 responses indicated employment in 155 different job titles.

Firms generally do not hire their employees just out of high school but prefer those who are 23 to 30 years of age. These employees stay in a given job title from eight to twenty-five years, on the average.

The mean of all beginning salaries reported was $465 per month and the mean of all high salaries reported was $710 per month. There was a wide range in salaries.

Persons seeking employment in off-farm agricultural occupations should have at least a high school education. It is desirable for a large portion of the positions that the employees have some education beyond high school. Nearly a quarter of the responses indicated that college graduation was desired, especially for management positions.

A farm background and some type of work experience is a definite advantage to the person seeking employment in an off-farm agricultural position. These competencies were considered important for entry into nearly all of the job titles: Employee relations with supervisor, Employee relations with fellow workers, Communications, and Salesmanship and customer relations.

LUTHER, CARTER V. A Study of Opportunities and Pre-Employment Competencies Needed for Off-Farm Agricultural Occupations. Thesis, M.S., 1965, University of Idaho. 64 p. Library, University of Idaho, Moscow.

Purpose. -- (1) To determine the levels of agricultural employment; (2) To determine job opportunities and the competencies needed for employment; (3) To associate the levels of employment and the salaries; (4) To determine the areas of vocational agriculture most important to each level of employment and the best methods of obtaining agricultural training; and (5) To determine the willingness of respondents to participate in educational training programs coordinated by the schools and the employers.

Method. -- Forty-three (43) agricultural related businesses were personally surveyed in the Fall of 1964 and January of 1965. The survey was concerned with employment opportunities and the competencies needed for employment. This survey classified the levels of employment: Unskilled, semi-skilled, skilled, sales people, consulting, and supervisory-managerial.

Findings. -- (1) There were 299 full-time employees in agricultural related industry; of these, 224 were in the skilled and above levels of employment. This showed 5 per cent unskilled; 40 per cent skilled; 19 per cent semi-skilled; 16 per cent sales; 3 per cent consulting; and 18 per cent supervisory-managerial. (2) There were 120 future job openings, including both additions and replacements, for the next five years, the managers estimated: 11 unskilled, 32 semi-skilled, 52 skilled, 16 sales people, 6 supervisory-managerial. Of these 120 jobs, 77 per cent were in the skilled or above level of employment. (3) The salaries averaged $288 per month for the unskilled, $321 for the semi-skilled, $384 for the skilled, $416 for the sales people, $496 for the consulting, and $537 for the supervisory-managerial. (4) Managers thought that 78 per cent of the employees in agricultural occupations would benefit from agricultural training. (5) For all levels of employment, farm experience was considered essential to 17.6 per cent, highly important to 43.7 per cent, and useful to 37 per cent. Farm experience was thought more important to the higher levels of employment than to the unskilled. (6) The best method for an employee to get a farm background for farm related occupations, in order of importance, was actual farm experience, on-the-job training, vocational agriculture in high school, agriculture in college and agriculture in junior college. (7) Areas of training and experience in agriculture which employers recommended from the most important to the least important were leadership ability; farm experience; general shop skills; mechanical skills; agricultural mathematics; farm accounting and management; farm machinery operation; weed, insect, and disease control; irrigation and fertilization; livestock management; animal feeding; welding; crop culture; and other. (8) Training other than agriculture thought most desirable for employees by the employers was first sales training; mathematics; physical science; business; speech; English and journalism; and leadership. (9) All businesses were willing to cooperate to whatever degree was practical for their industry.

MAGISOS, JOEL H. Occupations Of Former Vocational Agriculture Students In The State Of Washington. Staff Study, 1966, Washington State University. 19 p. Agricultural Education Library, Washington State University, Pullman.

Purpose. -- The primary purpose of this study was to determine the current occupational status of former students of vocational agriculture and to categorize their occupations into major components which relate to the vocational agriculture program.

Method. -- The data were requested of vocational agriculture teachers that had served their respective school districts continuously during the period under investigation. Lists of former students of vocational agriculture who graduated or dropped out of high school during the school years 1955-56, 1958-59, 1961-62, and 1964-65 were compiled. It was suggested that they rely upon general and departmental records, their own knowledge, and upon the knowledge of professional associates, parents, and others to ascertain the current occupational status of each of the subjects upon the list.

Survey forms were provided as a means of identifying former students involved in the study and upon which to record their accumulative grade point average, year leaving school, current employment status in several categories, employer's address, and other data.

Findings. -- A percentage of former vocational agriculture students are currently employed as follows: (1) full-time and part-time farming, 10.70% when excluding for computation, those unavailable for employment; and (2) currently employed in off-farm agricultural occupations, 15.75%, when excluding those unavailable for employment. When considering the entire sample, with the exception of those unavailable for employment, 61.69% were in the nonagricultural occupations.

Of the total sample, 24.19% were unavailable for employment. At 21.92%, military service was the principal reason for unavailability, the largest share having completed high school in the 1961-62 or 1964-65 school year (32.44% and 32.38%).

Unemployment among former vocational agriculture students was only 0.33%, when excluding those unavailable for employment.

MARBLE, GERALD L. Economic Importance Of Farm Mechanical Abilities As Indicated By Farmers. Master's Report, M.Ed., 1966, Colorado State University. 156 p. Library, Colorado State University, Fort Collins.

Purpose. -- To discover those farm mechanics skills and management abilities which: (1) have an economic bearing on the success of the farm business, (2) are being performed by farm operators, and (3) there is a need and desire for adult farmer training. To determine curriculum changes in the Woodlin (Colorado) High School farm mechanics training program.

Method. -- Data were secured by questionnaire from 65 farm operators.

Findings. -- The data indicated 27 or 33.7 per cent of the 80 skills were performed by 80 per cent or more of the respondents and were in safety, repair, servicing, and/or maintenance of farm power, farm machinery, farm shop work, and farm buildings and conveniences. Skills in rural electrification and soil and water management were performed least.

Thirty-five or 43.7 per cent of the 80 skills had total weighted economic importance scores of 200 or over out of a possible total score of 260. These were servicing, maintenance, repair, adjustment, replacement of parts, and trouble shooting in all farm mechanics areas surveyed. Other skills rating 200 or above were overhauling transmissions, differentials, and power units (both major and minor overhauling).

Thirteen or 43.3 per cent of the 30 management activities were performed by 80 per cent or more of the farmers with scores of 200 or above for economic importance. The highest responses were recognizing and correcting hazards, understanding operating principles, and selecting equipment and materials.

Relatively few farmers expressed a need and desire for training in skills or management abilities except in repairing and replacing parts on diesel type power units (18 or 27.7 per cent).

It was recommended that training emphasis be given in those skills and management activities performed by and rated as important by the respondents.

MARKWELL, QUENTIN ROSS. An Evaluation of the Cost to Local School Districts in Maintaining A Vocational Agriculture Department in the State of Idaho. Thesis, M.S., 1966, University of Idaho. 42 p. Library, University of Idaho, Moscow.

Purpose. -- To determine and evaluate the financial policies of obtaining buildings, permanent equipment and tools, supplies and maintenance, travel, insurance, and other general needs of vocational agriculture in Idaho school districts.

Method. -- Statistical data were obtained by mail questionnaire from thirty-four Idaho school superintendents having one or more vocational agriculture departments.

Findings. -- The study determined that the average space devoted to vocational agriculture departments responding to the survey was 3862 square feet and the average cost of constructing the facilities was $9.40 per square foot. Permanent equipment and tool costs, as reported by respondents averaged $11.27 for each student enrolled. The average travel expense paid by districts for vocational agriculture business amounted to .074 cents per mile. Twenty-five of the thirty-four schools reporting had provided insurance covering injury to students during actual class time and twenty-nine of the thirty-four schools reporting carried liability insurance to cover the district as a unit. From the results of the study the writer made several recommendations which he believed would be beneficial to school administrators starting new programs of vocational agriculture and also recommendations that would help establish a more uniform financial policy in Idaho.

ROYS, WALTER L. The Contribution Of Vocational Agriculture To Leadership Development In Selected Washington High Schools. Thesis, M.S., 1966, Washington State University, 25 p. Holland Library, Washington State University, Pullman.

Purpose. -- The purpose of this study was to determine if the high school vocational agriculture program contributes noticeably to leadership development of students while in high school.

Method. -- Information concerning leadership activities and grade point averages was secured from 23 high schools in Washington State that had a student enrollment of 200-400 students and a vocational agriculture program. Names of the 1965 senior boys and their grade point averages were secured from each school's vocational agriculture teacher. Leadership information was taken from the 1965 high school yearbook. Numerical values were arbitrarily determined and summarized for two groups within each school, a vocational agriculture group of 257 and a nonvocational agriculture group of 493 senior boys.

These two groups were compared with respect to leadership activities and grade point averages.

Findings. -- The data showed that the vocational agriculture groups had a significantly lower mean grade point average at the .01 level than did the nonvocational agriculture group. It was also found that the two groups did not differ significantly at the .01 level in mean per capita leadership scores.

The vocational agriculture group was able to stay on a par with the nonvocational agriculture group despite a significant difference in scholastic achievement. With this in mind the writer concluded, that the high school vocational agriculture program is contributing to the leadership develop ment of students while in high school.

SCHNITKER, DARRELL RUSSELL. A Study to Determine What Effect the Technological Advances of Motorized Farm Equipment Have on the Vocational Agriculture Farm Shop Program in Gooding County, Idaho. Thesis, M.S., 1966, University of Idaho. 71 p. Library, University of Idaho, Moscow.

Purpose. -- To make an evaluation of the effect that technological advances of motorized farm equipment have had on the farm shop program in Gooding County, Idaho. In addition a study was made to determine what specific jobs within the general area of multiple cylinder engine overhaul and maintenance should be included in a farm mechanics course of study and to have this serve as a guide for Idaho vocational agriculture instructors for establishing an effective farm shop program.

Method. -- Statistical data were obtained from thirty-four selected farmers in Gooding County, Idaho, who had sons enrolled in vocational agriculture and from sixty-six Idaho vocational agriculture instructors by the use of a mail questionnaire. The dual survey covered all pertinent areas that pertained to the general theme of the study.

Findings. -- It was found that the technological advances of motorized farm equipment has had a definite effect on the type of instruction being offered in the vocational agriculture farm shop program in Idaho. Even though motorized farm equipment is becoming more advanced and complicated, instructional work in maintenance and overhaul of multiple cylinder engines should be included in the course of study for vocational agriculture students. It was found also that many in-service types of training programs are needed by the vocational agriculture instructors in Idaho to properly conduct an effective program in multiple cylinder engine overhaul and maintenance.

SCOVILLE, DOUGLAS ALLAN. A Study to Determine the Responsibility of Vocational Agriculture in Regard to Animal Health Instruction in Butte County, Idaho. Thesis, M.S., 1966, University of Idaho. 47 p. Library, University of Idaho, Moscow.

Purpose. -- To determine what method the livestock producers use in the identification and treatment of the major infectious and non-infectious diseases of livestock present in Butte County, Idaho. To recommend a course of study in regard to livestock health in high school and adult classes in vocational agriculture.

Method. -- Statistical data were obtained from seventy-five livestock producers in Butte County by the personal interview method. The questionnaire contained questions in regard to livestock producer's problems in animal health during the previous five years.

Findings. -- Three areas of livestock production were evaluated to determine what disease information should be stressed, should be included if time were available, and should not be included in animal health instruction unless special interest is shown. The areas of livestock production included were beef cattle, sheep, and dairy cattle.

In the final analysis it was also concluded that 100 per cent of the livestock producers had to do a major portion of their own veterinary work. The questionnaire also indicated that a veterinarian could be used quite extensively in Butte County in the treatment of livestock diseases if he were located in Arco, Idaho. This is indicated by seventy-five livestock producers stating that they would have called a veterinarian if he were located in Arco, Idaho an average number of 5.59 times per producer during the year of 1965.

SHAMI, MOHAMMAD ANSAR AHMED. Use of School Farms in Washington. Thesis, M.S., 1966, Washington State University. 78 p. Holland Library, Washington State University, Pullman.

Purpose. -- This study was conducted in order to ascertain the uses made of the school farms by high schools of Washington State.

Method. -- Twenty-five teachers, who reported to have school farms, were personally contacted at an annual convention of agriculture teachers. A questionnaire, designed to gather information on status and use of school farms, was given to the respondents for completion in the presence of the writer. An opinionaire, constructed to secure the opinions of the agriculture teachers having school farms regarding certain aspects of school farm programs, was mailed to the respondents.

Findings. -- The study revealed that farm land in 22 schools was the property of the school. Farm machinery was secured mostly on custom hiring and through FFA funds. In 14 schools, the students worked on the farm both during and after the school hours. In most of the schools, students worked on the farm either on group projects or on both group and individual projects. Seven schools offered high school credit to the students for farm work. In 22 schools, the students were involved in decision making regarding the operation of the school farm. Manual work at the school farm was done mostly by the students. Twenty school farms were operated at a profit. In every case, FFA chapters received all or some of the profit. In 20 schools, students were involved in record keeping of the school farm. The most frequently mentioned difficulties of school farms were (a) lack of finances for farm operation, (b) securing student help, (c) shortage of irrigation water, and (d) too much demand on the teacher's time. Most of the teachers stated that during summer, the agriculture teacher was responsible for the management of the farm. In their comments about the school farms, the respondents expressed favorable feelings about school farms.

STEPHENS, ALLEN IRVING. To Determine The Vocational Agriculture Needs For Certain Off-Farm Agricultural Occupations In The Ogden Area. Thesis, M.S., 1966, Utah State University, Main Library, Utah State University, Logan.

Purpose. -- To determinte the vocational agriculture needs for certain off-farm agricultural occupations in the Ogden area.

Method. -- One year before this study was initiated a complete report had been made on all of the Off-Farm Agricultural Occupations in the Ogden area. Mr. Stephens made a follow-up study to determine the need for training in the various areas and the support that would be given by equipment and implement dealers and ornamental horticulturists if vocational programs were conducted in the area.

Findings. -- Equipment dealers and nurserymen recognized the need for additional training for their employees and were very willing to cooperate in a program that would meet the needs.

SUKRASEP, KANCHANA and STAFF, Agricultural Education Department. Changes, Modernization, New Courses, and Developments in Agricultural Education In California High Schools - 1965. Non-thesis study, 1965, California State Polytechnic College. 25 p. Department of Agricultural Education, California State Polytechnic College, San Luis Obispo.

Purpose. -- The purpose of this survey was to acquire specific information regarding changes which were taking place in agricultural education in California high schools. The survey was co-sponsored by the State Bureau of Agricultural Education.

Method. -- A representative sample of high schools of different sized (number of students), in different geographical areas of the state was determined and surveyed. One hundred eighteen replies were received.

Findings. -- (1) Almost one-half of the high school agriculture departments responding had changed course titles. Most frequently mentioned titles included words such as Science, Ornamental Horticulture, Management and Business. (2) About half of the schools reported changes in pirmary purpose and objectives. (3) Approximately 75% indicated changes in course content. (4) Twenty nine percent indicated changes in emphasis to include business and related occupations, and twenty per cent reported changes to include more emphasis in Agricultural Science. (5) One-third of the schools reported changes in the source of financial reimbursement (Federal Funds) with 85% of the changes due to addition of VEA 1963 funds. (6) Sixty-six of the 118 schools offered a total of 110 new courses.

TESNOHLIDEK, DWAINE ARNOLD. A Study to Formulate A Farm Management Course of Study for Adult Farmers In Payette County. Thesis, M.S., 1965, University of Idaho. 67 p. Library, University of Idaho, Moscow.

Purpose. -- To find the type of training farmers feel they need in farm management in order to increase the efficiency and income of the farm.

Method. -- Farmers of Payette County completed a questionnaire in regard to courses they felt were needed in a farm management adult class. Items rated important by fifty per cent or more of the farmers should be strongly emphasized and be taught as soon as possible. Items not checked by farmers were considered to be of no importance in the course.

Findings. -- Eight-seven per cent of the farmers surveyed were of the opinion that additional information in farm management was needed. An adult course consisting of fourteen meetings in farm management was set up to be carried on at the local high school.

THOMPSON, O. E. and CARR, S. G. Values of High School Students and Their Teachers. Staff Study, 1966, University of California. 105 p. Department of Agricultural Education, University of California, Davis.

Purpose. -- This study was designed to provide information on the personal and occupational values of high school students and their teachers. The primary purpose was to determine whether personal and/or occupational value patterns change during high school. Other objectives of the study were to determine whether the ability of teachers and students to communicate with each other is related to their value patterns; to determine whether friendship patterns within high school classes are related to personal values of students; and to determine whether value patterns of students are influenced by certain socio-economic and psychological factors.

Method. -- Students from ten central California high schools were tested as freshmen, retested as sophomores, and again as seniors. Each year teachers of these students were also tested. Complete data were obtained on 1365 students and 371 teachers. The basic instruments used were the Differential Values Inventory, the Study of Values, an occupational value scale, and a personal information questionnaire.

Findings. -- Personal and occupational values were quite stable by the time students entered high school. Change in value patterns from the freshman through the senior year was negligible. Personal value patterns of students were related to the kind of community in which the school was located, the size of the school, whether the school was public or private (parochial), the student's occupational choice, his academic achievement, his educational objectives, and the frequency of his church attendance. Friendship patterns among students were related to their personal values, although no distinct pattern could be found except on group characteristics. The ability of students to understand their teachers was not related to their personal value patterns. Students and teachers wanted their occupations to provide pleasure and the opportunity to help others, and both tended to shun the responsibilities of leadership and supervision. Personal-value profiles of teachers were related to their subject-matter specializations, age, and religious participation. No relationship existed between the value patterns of teachers who were readily understood and those who were less easily understood by students.

WALMSLEY, FREDERICK JOHN. A Study for Instructional Need in Farm Business Management for Idaho Adult Classes. Thesis, M.S., 1965, University of Idaho. 47 p. Library, University of Idaho, Moscow.

Purpose. -- To determine what subject matter the Idaho vocational agriculture teachers believed should be included in a farm business management course and to determine what the farmers of Magic Valley believe to be their needs in farm management instruction. To establish a course outline and procedural methods for adults in farm business management.

Method. -- Statistical data was obtained from sixty Magic Valley farmers by the personal interview method. Similar information was also obtained by mail questionnaire from vocational agriculture teachers in Idaho. The survey consisted of six main topics which were farm decision making, farm records, record analysis, farm financing, farm insurance, and tax management. Instructional methods were also evaluated by the respondents.

Findings. -- Six to eleven subject areas were included under each of the main topics listed above. In the final analysis three lists of subject matter areas were determined. The first list included subject matter areas that should be stressed in the farm business management curriculum. The second list included subject matter areas that should be included if time is available, and the third list included subject matter areas that should be included only if desired by the class members. Nine recommendations in regard to conducting farm business management courses were also listed by the writer. It was found that farmers are most interested in direct methods of record keeping and record analysis than the study of basic economic principles, however, it was recommended that these principles must be stressed by the farm business management instructor.

WARFIELD, DANNY LAVERNE. An Evaluation of the Vocational Agricultural Summer Program by Washington School Administrators. Thesis, M.S., 1966, University of Idaho. 47 p. Library, University of Idaho, Moscow.

Purpose. -- To determine the importance of the summer program activities and to help the vocational agriculture teacher to evaluate his program. To bring to the attention of the Washington State administrators the full duties of the vocational agriculture teacher during the summer months.

Method. -- Statistical data were obtained from one hundred and twenty-six Washington administrators by the questionnaire method. The survey consisted of the administrators' opinion of the importance of nine main summer topics.

Findings. -- Three to seven job activities were included under each of the nine topics. In the final analysis the activities were rated as very important, important and of no importance. Supervised farming, fair and show activities, department administration and professional improvement were topics that had activities listed as very important. Over half (58.7 per cent) of the administrators felt the vocational agriculture teacher should spend 20 to 60 per cent of his summer time supervising the student's farming program. The survey indicated that 61.5 per cent of the administrators were against twelve-month employment of vocational agriculture teachers.

WOOD, JAY MILTON. The High School Education Needed For Entry Into Occupations In The Farm Machinery Business In Spokane County, Washington. Thesis, M.S., 1966, Washington State University. 58 p. Holland Library, Washington State University, Pullman.

Purpose. -- The purpose of the study was to determine the kind of education that a high school graduate needs for entry into the farm machinery business.

Method. -- The data for the study were collected by a questionnaire and by personal interviews. The questionnaire was a modified version of one prepared by Teacher Educators and State Supervisors of Vocational Agriculture at the National Center for Advanced Study and Research in Agriculture Education at Ohio State University in Columbus, Ohio. The personal interviews were done by the writer.

The study was confined to Spokane County in which there were 14 businesses dealing with agricultural machinery.

Findings. -- In the 14 firms where interviews were done, it was found that most employees would employ workers at age 18 or over. They preferred those who had a farm background, at least a high school education, and those who had obtained some work experience before being hired. The employers, in general, felt that high school courses in typing, bookkeeping, general mathematics, and penmanship would provide valuable training for prospective employees.

Respondents felt that the most important functions, activities, and duties were meeting people, selling, estimating costs, reading technical reports, writing business letters, and writing sales slips.

The areas of technical training which were termed essential for employees in farm machinery firms were the following: In mechanics and engineering, (1) farm machinery, (2) basic mechanical skills (3) internal combustion engines, (4) farm tractors; in agricultural business management, (1) agricultural economics, (2) agricultural marketing, and (3) business administration.

All employers were willing to permit high school students to visit and observe the various operations involved in the farm machinery business.

Some problem areas which employers could foresee in a high school on-the-job training program included time involved in training student employees, liability insurance, and student attitude.